of sideslip is increased up to the maximum appropriate to the type of airplane.

(2) At larger slip angles, up to the angle at which the full rudder or aileron control is used or a control force limit contained in §23.143 is reached, the aileron and rudder control movements and forces may not reverse as the angle of sideslip is increased.

(3) Rapid entry into, and recovery from, a maximum sideslip considered appropriate for the airplane may not result in uncontrollable flight characteristics.

§23.181 Dynamic stability.

(a) Any short period oscillation not including combined lateral-directional oscillations occurring between the stalling speed and the maximum allowable speed appropriate to the configuration of the airplane must be heavily damped with the primary controls—

(1) Free; and

(2) In a fixed position.

(b) Any combined lateral-directional oscillations (''Dutch roll'') occurring between the stalling speed and the maximum allowable speed appropriate to the configuration of the airplane must be damped to 1/10 amplitude in 7 cycles with the primary controls—

(1) Free; and

(2) In a fixed position.

(c) If it is determined that the function of a stability augmentation system, reference §23.672, is needed to meet the flight characteristic requirements of this part, the primary control requirements of paragraphs (a)(2) and (b)(2) of this section are not applicable to the tests needed to verify the acceptability of that system.

(d) During the conditions as specified in §23.175, when the longitudinal control force required to maintain speeds differing from the trim speed by at least plus and minus 15 percent is suddenly released, the response of the airplane must not exhibit any dangerous characteristics nor be excessive in relation to the magnitude of the control force released. Any long-period oscillation of flight path, phugoid oscillation, that results must not be so unstable as to increase the pilot's workload or otherwise endanger the airplane.

[Amdt. 23–21, 43 FR 2318, Jan. 16, 1978, as amended by Amdt. 23–45, 58 FR 42158, Aug. 6, 1993]

EFFECTIVE DATE NOTE: By Amdt. 23–62, 76 FR 75755, Dec. 2, 2011, §23.181 was amended by revising paragraph (b), effective Jan. 31, 2012. For the convenience of the user, the revised text is set forth as follows:

§23.181 Dynamic stability.

* * * * *

(b) Any combined lateral-directional oscillations (Dutch roll) occurring between the stalling speed and the maximum allowable speed (V_{FE}, V_{LE}, V_{N0}, V_{FC}/M_{FC}) appropriate to the configuration of the airplane with the primary controls in both free and fixed position, must be damped to 1/10 amplitude in:

(1) Seven (7) cycles below 18,000 feet and

(2) Thirteen (13) cycles from 18,000 feet to the certified maximum altitude.

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STALLS

§23.201 Wings level stall.

(a) It must be possible to produce and to correct roll by unreversed use of the rolling control and to produce and to correct yaw by unreversed use of the directional control, up to the time the airplane stalls.

(b) The wings level stall characteristics must be demonstrated in flight as follows. Starting from a speed at least 10 knots above the stall speed, the elevator control must be pulled back so that the rate of speed reduction will not exceed one knot per second until a stall is produced, as shown by either:

(1) An uncontrollable downward pitching motion of the airplane;

(2) A downward pitching motion of the airplane that results from the activation of a stall avoidance device (for example, stick pusher); or

(3) The control reaching the stop.

(c) Normal use of elevator control for recovery is allowed after the downward pitching motion of paragraphs (b)(1) or (b)(2) of this section has unmistakably been produced, or after the control has been held against the stop for not less than the longer of two seconds or the time employed in the minimum steady slight speed determination of §23.49.

(d) During the entry into and the recovery from the maneuver, it must be possible to prevent more than 15 degrees of roll or yaw by the normal use of controls.